

**Notice of Allowability**

Application No.

09/727,424

Applicant(s)

KAJI ET AL.

Examiner

Art Unit

Aaron C Perez-Daple

2154

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment filed 8/13/04.
2. ☒ The allowed claim(s) is/are 2-6, 9-12, 16-26, 28 and 29.
3. ☒ The drawings filed on 25 September 2003 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_



### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Katushiro Arai (Reg. 43,315) on 12/14/04.

2. The application has been amended as follows:

In the Claims:

- I. Cancel claims 1, 7, 8 and 27.
- II. Claim 2 (currently amended):

The method according to ~~Claim 1~~ Claim 28, wherein the control module comprises a main control module and an auxiliary control module for adjusting output of the main control module, and step (b) is conducted on the auxiliary control module.

- III. Claim 5 (currently amended):

The method according to ~~Claim 1~~ Claim 28, wherein the control module comprises a central control module and multiple local control modules each receiving signals from the central control module and outputting signals to the respective replaceable devices, and step (b) is conducted on the central control module.

- IV. Claim 6 (currently amended):

The method according to ~~Claim 1~~ Claim 28, wherein the heuristic processing is evolutionary computation, and the templates are chromosomes.

JOHN FOLLANSBEE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100

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V. Claim 9 (currently amended):

The method according to ~~Claim 1~~ Claim 28, wherein the machine assembly is a watercraft.

VI. Claim 26 (currently amended):

The method according to ~~Claim 1~~ Claim 28, wherein the evaluation of output of the machine assembly by the user's ultimate choice and that by the preselected target are switched based on time or the user's choice.

3. The following is an examiner's statement of reasons for allowance: As for independent claims 11 and 29, the prior art in record does not teach or suggest an optimization apparatus for optimizing operation of a machine assembly having all the claimed limitations including an autonomous evaluation unit, an autonomous evolutionary process unit, an evaluation input unit, and an interactive evolutionary process unit which function in combination to evaluate and optimize at least a single variable. As for independent claim 28, the prior art in record does not teach or suggest an optimization method for optimizing operation of a machine assembly having all the claimed limitations including a single control module using fuzzy rules and control parameters, wherein the control parameters include parameters defining the fuzzy rules evaluated based on the user's ultimate choice and parameters defining the coefficients of input and output evaluated based on a preselected target. Therefore, the present invention teaches an improved optimization apparatus and method for optimizing operation of a machine assembly.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the

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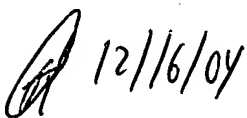
issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

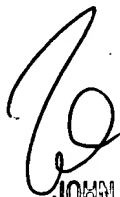
4. The prior art made of record and not relied upon is cited because it demonstrates the state of the art: US 6,021,369.
5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron C Perez-Daple whose telephone number is (571) 272-3974. The examiner can normally be reached on 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on (571) 272-3964. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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